

REMARKS

By this response, claims 1-29 are pending. All claims remain as originally presented, with the exception of claim 6 having an amended preamble to overcome the Examiner's objection. Substantively, the claims stand variously rejected as obvious under 35 U.S.C. §103(a) in view of Reid (U.S. 5,414,454) or Reid in combination with Farr (U.S. 6,634,732).

Preliminarily, the Examiner objects to the Figures as twice reciting the heater chip as both elements 251 and 321. Alternatively, she objects to the Figures as reciting the heater chip as element 321 and the ink via as element 321. In response, the heater chip is properly element "251" while the ink via is properly element "321." The confusion comes from the Applicant's improper recitation to the heater chip in the specification as both elements 251 and 321. Thus, changes to the specification clarify the heater chip as exclusively element "251" and never "321." The changes to the Figures 5A and 5B place a lead line with element 321 to more properly show the location of the ink via in the heater chip. This should overcome all drawing objections.

Turning to the rejections, the Examiner relies exclusively on Reid to render obvious, in part, a leading edge of an encapsulant bead being a certain distance away from the nozzle holes of a nozzle plate. In various claims, this distance is less than about 500 microns (independent claims 1 and 26, and their progeny) or less than about 400 microns (independent claims 7 and 21, and their progeny). In the Office Action, the Examiner states "it would be obvious to . . . optimize this distance" for various purposes, such as "simplifying the manufacturing process" (*e.g.*, 3-1-06 Office Action, p. 4, ¶ numbered 7) or "covering the nozzle holes" (*e.g.*, 3-1-06 Office Action, p. 5, ¶ numbered 17). Alternatively, the Examiner relies on Reid for teaching a tape overlying nozzle holes for sealing the holes, but "not touching" the encapsulant bead. *See, e.g.*, 3-1-06 Office Action, p. 4, ¶ numbered 9. Still alternatively, Reid is cited for teaching a sealing tape having a "narrow width portion shorter

than a width of said nozzle plate.” *See, e.g., 3-1-06 Office Action, p. 8, ¶ number 32.* On all three points, the Applicant traverses the rejections and requests reconsideration of the claims as originally presented.

First, the Examiner’s contention of obviousness regarding an “optimized [close] distance” for manufacturing or covering the nozzle holes is faulty. As taught by Reid, close tolerances, such as those claimed in the instant invention, “are difficult to achieve” in “volume manufacturing.” *Col. 2, ll. 15-16.* Thus, Reid teaches away from close tolerances in a chip in favor of putting slits 46 in conventionally sized sealing tape 40 for covering conventionally sized nozzle plates 16. The instant invention, on the other hand, recognizes that variously shaped packaging tape indeed “allow[s] encapsulant beads to occupy nozzle plate areas closer to nozzle holes than heretofore known. In turn, manufacturers can shrink the size of their heater chips and save on silicon costs.” *Applicant’s specification, page 2, lines 27-29.* Also, Figure 6C of the instant invention, and its attendant written description, teach the closest tolerances of chips heretofore known. For at least this reason, the claims are patentable.

Second, the Applicant agrees with the Examiner that Reid does not disclose any distances between encapsulant beads and nozzle holes. However, skilled artisans will appreciate that Reid’s solution to the problem of tape lifting off the nozzle holes relates exclusively to providing slits 46 in the sealing tape 40. As is unequivocal, Reid never discusses moving the encapsulant beads closer to the nozzle holes as the Applicant does with its micron-sized limitations in the claims. Rather, Reid keeps the same exact configuration of the prior art nozzle plate, nozzle holes and overlying encapsulant beads. Reid also keeps the same exact configuration as the prior art sealing tape, but for the slits 46 being carved therein. Thus, Reid does not change the size of sealing tape or move encapsulant beads closer to nozzle holes. Reid cannot then render obvious the Applicant’s claims requiring

distances of beads and nozzle holes, closer than the prior art, of less than about 400 and 500 microns. Keep in mind, as NMOS manufacturing gives way to CMOS manufacturing, heater chip sizes shrink and silicon savings are important. To this end, the Applicant saves on silicon by moving beads closer to the nozzle holes and does so because they are not limited by the size of the sealing tape. This is antithetical to Reid which is described in the Applicant's specification in the background section at page 2, lines 9-10, whereby manufacturers "often create large-as-necessary distances d_1 , d_2 [Figure 2, prior art] between the edge of the nozzle holes and the edge of the encapsulant bead."

Third, Reid absolutely teaches all embodiments of a sealing tape 40 as directly touching and contacting the encapsulant bead 20. Figure 4 of Reid shows this best. To be sure, Reid does show something not touching the encapsulant bead, but what is not touching the encapsulant bead is the opening or the slit 46 in the tape. In other words, Reid's tape touches the bead but the absence of tape (the slit) does not. However, the Applicant does not claim a slit (or absence of tape) not touching the encapsulant bead, but the tape itself. Precisely, each of the Applicant's claims 6, 8-13 and 15-29, directly or by dependence on another claim, recite the "tape" as "not touching" the encapsulant bead. In other words, the Applicant claims a tape that is not touching beads, while Reid shows a tape 40 always and manifestly touching the encapsulant bead 20. This cannot then anticipate or render obvious.

Fourth, the Examiner cites Reid for teaching a tape with "a narrow width portion shorter than a width of said nozzle plate" as in Applicant's claims 12, 19 and 26-29. For this proposition, she cites Reid's Figure 3 and *col 2, ll. 12-16*. In the specification, this amounts to "a narrow tape." *Col. 2, l. 12*. It says nothing at all about narrow and wide portions of the same tape. It simply states a narrow or skinny tape. In the Figures, Reid teaches a tab 50 attached to the tape 40 for users to grasp during use to remove the tape from the nozzles. Clearly, the tab 50 has a width shorter than the width of the tape 40. Akin to this tab 50,

however, is the Applicant's user tab 19 in Figures 3A-3D. But the Applicant is not claiming a user tab with a width difference compared to the tape, but the tape itself having a narrow width portion, such as element 13, distinguished by the wide portion of the tape at elements such as 15a, 15b, and 15c. Reid, on the other hand, has a tape 40 (not the user tab 50) of uniform width and length. In other words, Reid's tape is a complete rectangle with uniform width. It cannot then have a narrow width portion.

Moreover, the Applicant claims (12, 19 and 26-29) that the narrow width portion of the tape is "shorter than a width of the nozzle plate." Because Reid never discusses the feature of the tape width relative to the nozzle plate width, the only teaching of Reid on point is in the Figures. Yet, the Figures of Reid all teach the width (and length, for that matter) of the tape 40 as much longer than the width of the nozzle plate 16. This cannot then meet the limitation of the claims.

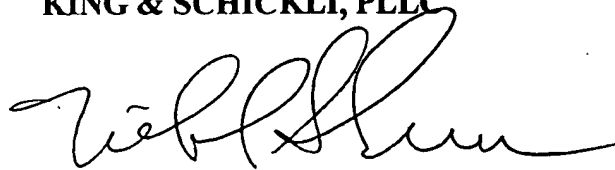
The remaining claims are submitted as patentable as being dependent on a base claim described above. Also, a detailed discussion of Farr is not required because all of the independent claims above stand or fall on the Examiner's characterization of Reid and its: (1) lack of teaching regarding bead-to-nozzle-hole distances (much less a lack of teaching of shorter distances in comparison to the prior art); (2) its touching (instead of "not touching") of tape to encapsulant beads; and (3) its tape being purely rectangle with (a) no narrow width portion and (b) no narrow width portion being shorter than a width of the nozzle plate. Notwithstanding no discussion of Farr being required, Farr's tape 200, 300, 400, 700 has the same shape (other than a differentiation in layers) as Reid's tape, including: (a) the same rectangle orientation much larger than the nozzle plate in both width and length; and (b) the user tab (element 230, 330, 430 and 730) differentiated from the tape for grasping during use. Thus, Farr's tape adds nothing to the discussion of the patentability of the independent claims.

Application Serial No. 10/775,939
Amendment dated April 13, 2006
Reply to Office Action of March 1, 2006

For at least these reasons, the Applicant submits that all claims are in a condition for allowance and requests a timely Notice of Allowance be issued for same. ***To the extent any fees are due, although none are believed due, the undersigned authorizes their deduction from Deposit Account No. 11-0978.*** If any other matters require attention, please have the Examiner contact the undersigned representative.

Respectfully submitted,

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Date APR 13 2006

4/13/06

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Amendments to the Drawings:

The attached sheets of drawings include changes to Figures 5A and 5B. In general, a lead line for element 321 is added to show a representative placement of an ink via 321 in a heater chip 251.

Attachments: Replacement Sheets (2)
 Annotated Sheets Showing Changes (2)